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Education

- Ph.D. Reservoir Engineering, Department of Materials Sciences and Mineral Engineering, University of California at Berkeley, Berkeley, CA, USA
- M.S. Reservoir Engineering, Department of Materials Sciences and Mineral Engineering, University of California at Berkeley, Berkeley, CA, USA
- M.S. Petroleum Engineering, Department of Petroleum Engineering, Southwest Petroleum Institute (Currently, Southwest Petroleum University), Sichuan, China
- B.S. (Eqv.) Petroleum Engineering, Department of Petroleum Engineering, Daqing Petroleum Institute (Currently, Northeast Petroleum University), Heilongjiang, China

Memberships and Honors

- Fellow and Member of Geological Society of America (GSA) since 2006
- Reservoir Modeling Chair of Foundation CMG
- Member of SPE (Society of Petroleum Engineers) since 1985
- Member of AGU (American Geophysical Union) since 1985
- Member of International Professionals for the Advancement of Chinese Earth Sciences (IPACES) since 2006

Academic Experience

- 2008-Present

  Professor and Foundation CMG Reservoir Modeling Chair, Dept. of Petroleum Engineering, Colorado School of Mines (CSM), Golden CO, USA.

- 2008 – Present
  Guest Scientist, Earth Sciences Division, Lawrence Berkeley National Laboratory (LBNL), University of California, Berkeley, CA, USA.

- 2006 – Present
  Adjunct Professor, Dept. of Energy and Resources Engineering, College of Engineering, Peking University, Beijing, China.

- 2012 – Present

Visiting Professor, China University of Geosciences, Beijing, China.

- 2013 – Present
  Adjunct Professor, China University of Petroleum, Qingdao, China.

- 1995 – 2008
  Staff Geological Scientist, Earth Sciences Division, Lawrence Berkeley National Laboratory (LBNL), University of California, Berkeley, CA, USA.

- 1990 – 1995
  Senior Hydrogeologist, HydroGeoLogic, Inc., Herndon, VA, USA.

- 1985 – 1990
  Research Assistant, Earth Sciences Division, Lawrence Berkeley National Laboratory, University of California, Berkeley CA, USA.

- 1982 – 1985
  Petroleum Engineer, Research Inst. of Petroleum Exploration and Development (RIPED), Beijing, China.

- 1976 – 1978
  Lecturer, Dept. of Petroleum Engineering, Daqing Petroleum Inst., Daqing, China.

Journal Publications

1. **Wu, Yu-Shu**, Jianfang Li, Didier Ding, Cong Wang, and Yuan Di, "A Generalized Framework Model for Simulation of Gas Production in Unconventional Gas Reservoirs," (in press) *SPE Journal,* 2014.
2. Zhang, R., **Y.S. Wu**, and P. Fakcharoenphol, "Non-Darcy Displacement in Linear Composite and Radial Aquifer during CO2 Sequestration," (in press) *International Journal of Oil, Gas and Coal Technology,* 2014
3. Rechard, R.P., J.T. Birkholzer, **Y.S. Wu,** J.S. Stein, and J.E. Houseworth, "Unsaturated flow modeling in performance assessments for the Yucca Mountain disposal system for spent nuclear fuel and high-level radioactive waste," *Reliability Engineering & System Safety,* Volume: 122, pp.124-144, Special Issue: SI, DOI: 10.1016/j.ress.2013.06.025, Feb 2014
4. Fakcharoenphol, P., Charoenwongsa, S., Kazemi, H., and **Wu, Yu-Shu**, "The Effect of Water-Induced Stress To Enhance Hydrocarbon Recovery in Shale Reservoirs," Society of Petroleum Engineers. doi:10.2118/158053-PA, SPE Journal, pp. 897-909, October, 2013
5. Litang Hu, Philip H. Winterfeld, Perapon Fakcharoenphol, and **Yu-Shu Wu**," A novel fully-coupled flow and geomechanics model in enhanced geothermal reservoirs," *Journal of Petroleum Science and Engineering*, Volume 107, 3-4, pp. 1-11, 2013
6. Sudicky, Edward A., Hyoun-Tae Hwang, Walter A. Illman, **Yu-Shu Wu**, Jan B. Kool, and Peter Huyakorn, "A semi-analytical solution for simulating contaminant transport subject to chain-decay reactions," *Journal of Contaminant Hydrology*, 144, pp.20–45, 2013
7. Yuedong Yao, **Yu-Shu Wu,** and Ronglei Zhang, "The Transient Flow Analysis of Fluid in a Fractal, Double-Porosity Reservoir," Journal of *Transport in Porous Media*, Volume 94, Number 1, pp. 175-187, DOI: 10.1007/s11242-012-9995-y, 2012

8. Lai, Bitao, Jennifer L. Miskimins, and **Yu-Shu Wu**, "Non-Darcy Porous Media Flow According to the Barree and Conway Model: Laboratory and Numerical Modeling Studies," SPE-122611, *SPE Journal*, Volume 17, Number 1, pp.70-79, March 2012.
9. **Wu, Y. S.,** B. Lai, J. L. Miskimins, P. Fakcharoenphol, and Y. Di, "Analysis of Multiphase Non-Darcy Flow in Porous and Fractured Media," Journal of *Transport in Porous Media*, 88:205-233, DOI 10.1007/s11242-011-9735-8, 2011
10. Ju, Binshan, **Yu-Shu Wu**, and Tailiang Fan, "Study on Fluid Flow in Nonlinear Elastic Porous Media: Experimental and Modeling Approaches," *Journal of Petroleum Science and Engineering*, Volume 76, Issues 3-4, March 2011, Pages 205-211
11. **Wu, Y. S**., B. Lai, and J. Miskimins, "Simulation of Non-Darcy Porous Media Flow according to the Barree and Conway Model," Journal of *Computational Multiphase Flows*, Vol. 3, No. 2, pp.107-122, 2011
12. Pan, Lehua, Curtis M. Oldenburg, Karsten Pruess, and Yu-Shu Wu, Transient CO2 leakage and injection in wellbore-reservoir systems for geologic carbon sequestration, *Greenhouse*, *Journal of Gas Sci Technol.* 1:335–350, 2011
13. **Wu, Y. S**., Y. Di, Z. Kang, and P. Fakcharoenphol, "A Multiple-Continuum Model for Simulating Single-Phase and Multiphase Flow in Naturally Fractured Vuggy Reservoirs," *Journal of Petroleum Science and Engineering,* 78, DOI information: 10.1016/j.petrol.2011.05.004, pp. 13-22, 2011
14. Karasaki, Kenzi, Kazumasa Ito, Yu-Shu Wu, Michito Shimo, Atsushi Sawada, Keisuke Maekawa, Koichiro Hatanaka, "Uncertainty reduction of hydrologic models using data from surface-based investigation," *Journal of Hydrology*, doi:10.1016/j.jhydrol.2011.03.039, 2011
15. Pan, Feng, Jianting Zhu, Ming Ye, Yakov A Pachepsky, and **Yu-Shu Wu**, "Sensitivity Analysis of Unsaturated Flow and Contaminant Transport with Correlated Parameters," *Journal of Hydrology*, Volume 397, Issues 3-4, 3 February 2011, Pages 238-249, 2011
16. Shen, Pingping, Bin Zhu, Xian-Bin Li, and **Yu-Shu Wu**, "The Influence of Interfacial Tension on Water-Oil Two-Phase Relative Permeability," *Transport in Porous Media*, 85:505–520, DOI 10.1007/s11242-010-9575-y, 2010
17. Zhang, Dong-Li, Jiang-Long Li, and **Yu-Shu Wu**, "Influencing Factors of the Numerical Well Test Model of the Triple-Continuum in Fractured Vuggy Reservoir," *Journal of southwest petroleum university (science & technology edition),* Vol. 32 (6): ISSN: 1674-5086 (2010) 06-0113-08, pp.113-120, December, 2010
18. Zhang, Dong-li, Jiang-long Li, and **Yu-Shu Wu**, "A Triple-Continuum Numerical Well Testing Model for a Naturally Fractured Vuggy Reservoir," *Journal of southwest petroleum university (science & technology edition),* Vol. 32 (2), ISSN: 1674-5086 (2010) 02-0082-07, pp.82-88, April, 2010
19. Zhang, Dong-Li, Jiang-Long Li, Wen-Jun Du, and Yu-Shu Wu, "Triple-Continuum Numerical Well Test Interpretation Method of Oil-Water Flow for a Naturally Fractured Vuggy Reservoir," *Chinese Journal of Hydrodynamics*, Vo. 25 (4), DOI: 10.3969/j.issn1000-4874.2010.04.001, pp.429-437July, 2010
20. **Wu, Yu-Shu**, Ming Ye, and Edward Sudicky, "Fracture-Flow-Enhanced Matrix Diffusion in Solute Transport Through Fractured Porous Media," *Transport in Porous Media*, 81: pp.21-34, DOI 10.1007/s11242-009-9383-4, 2010
21. **Wu, Yu-Shu** and Guan Qin, "A General Numerical Approach for Modeling Multiphase Flow and Transport in Fractured Porous Media," *Communications in Computational Physics*, Vol. 6, No. 1, pp.85-108, 2009
22. Zhang, Wei, Yuan Di, and **Yu-Shu Wu**, "Assisted History-Matching Method Based on Ensemble Kalman Filter," *Journal of Daqing Petroleum Institute*, Vol. 33, No. 5, Sum. Nu. 153, pp. 74-78, Oct. 2009.

23. Pan, F., M. Ye, J. Zhu, **Y. S. Wu**, B.X. Hu, and Z. Yu., "Incorporating Layer- and Local-Scale Heterogeneities in Numerical Simulation of Unsaturated Flow and Tracer Transport," *Journal of Contaminant Hydrology*, 103, pp.194-205, 2009
24. Pan, L. C. M. Oldenburg, Y. S. Wu, and K. Pruess, "Wellbore Flow Model for Carbon Dioxide and Brine," ***GREENHOUSE GAS CONTROL TECHNOLOGIES*** 9, Book Series: Energy Procedia, Volume 1, Issue 1, pp. 71-78, 2009
25. Pan, F., M. Ye, J. Zhu, **Y. S. Wu**, B.X. Hu, and Z. Yu., "Numerical Evaluation of Uncertainty in Water Retention Parameters and Effect on Predictive Uncertainty," *Vadose Zone Journal,* 8, pp.158-166, 2009
26. **Wu, Yu-Shu** and P. A. Forsyth, "Efficient Schemes for Reducing Numerical Dispersion in Modeling Multiphase Transport through Porous and Fractured Media," *Vadose Zone Journal*, Vol. 7, No. 1, pp. 340-349, 2008
27. Pan, Lehua, Jiming Jin, Norman Miller, **Wu, Yu-Shu**, and Gudmundur Bodvarsson, "Modeling Hydraulic Responses to Meteorological Forcing: From Canopy to Aquifer," *Vadose Zone Journal*, Vol. 7, No. 1, pp. 325-331, 2008
28. **Wu, Yu-Shu**, Guoping Lu, Keni Zhang, L. Pan, and G. S. Bodvarsson, "Analyzing Unsaturated Flow Patterns in Fractured Rock Using an Integrated Modeling Approach," *Hydrogeology Journal*, Vol. 15, pp.553-572, 2007
29. Ye, Ming, Feng Pan, **Yu-Shu Wu**, Bill Hu, Craig Shirley, and Zhongbo Yu, "Assessment of Radionuclide Transport Uncertainty in the Unsaturated Zone of Yucca Mountain," *Advances in Water Resources*, Vol. 30, pp.118-137, 2007
30. **Wu, Yu-Shu**, "An Integrated Methodology for Characterizing Flow and Transport Processes in Fractured Rock," *Journal of China University of Geosciences,* Vol. 18, Special Issue, pp.110-111, 2007
31. Zhang, Keni, **Yu-Shu Wu**, James E. Houseworth, "Sensitivity Analysis of Hydrological Parameters in Modeling Flow And Transport in the Unsaturated Zone of Yucca Mountain," *Hydrogeology Journal*, Vol. 14, No. 8., pp. 1599-1619, 2006
32. Zhang, Keni, **Yu-Shu Wu**, and Lehua Pan, "Temporal Damping Effect of the Yucca Mountain Fractured Unsaturated Rock on Transient Infiltration Pulses," *Journal of Hydrology*, Vol. 327, pp.235-248, 2006
33. **Wu, Yu-Shu**, S. Mukhopadhyay, K. Zhang, and G. S. Bodvarsson, "A Mountain-Scale Thermal-Hydrologic Model for Simulating Fluid Flow and Heat Transfer in Unsaturated Fractured Rock," *Journal of Contaminant Hydrology,* Vol. 86, pp.128-159, 2006
34. **Wu, Yu-Shu**, Keni Zhang, and Hui-Hai Liu, "Estimating Large-Scale Fracture Permeability of Unsaturated Rock Using Barometric Pressure Data," *Vadose Zone Journal*, Vol. 5, pp.1129-1142, 2006
35. Song, Kao-Ping, **Yu-Shu Wu**, and Bing-Yu Ji, "A φ -Function Method for Estimating Residual Oil Saturation Distributions in Waterflooding Reservoirs," *Journal of Acta Petrolei Sinica,* Chinese Petroleum Society, Vol. 27, No. 3, pp.91-95, 2006
36. **Wu, Y. S.** and L. Pan, "An Analytical Solution for Transient Radial Flow through Unsaturated Fractured Porous media," *Water Resources Research*, Vol. 41, No.2, W02029, doi: 10.1029/2004WR003107, 2005
37. **Wu, Y. S.**, L. Pan, and K. Pruess, "A Physically Based Approach for Modeling Multiphase Fracture-Matrix Interaction in Fractured Porous Media," *Advances in Water Resources*, Vol. 27, pp.875-887, 2004
38. **Wu, Y. S**. and J. Liu, "Integration of Perched Water and Chloride Data in Modeling Flow Processes within the Unsaturated Zone of Yucca Mountain, Nevada," *Journal of Hydraulic Research, International Association of Hydraulic Engineering and Research*, Vol. 42, pp.115-120, 2004

39. **Wu, Y. S**., H. H. Liu, and G. S. Bodvarsson, "A Triple-Continuum Approach for Modeling Flow and Transport Processes in Fractured Rock," *Journal of Contaminant Hydrology*, 73, pp.145-179, 2004
40. Pan, L. **Y. S. Wu**, and K. Zhang, "A Modeling Study of Flow Diversion and Focusing in Unsaturated Fractured Rock," *Vadose Zone Journal*, Vol. 3, 233–246, 2004
41. **Wu, Y. S**., G. Lu, K. Zhang, and G. S. Bodvarsson, "A Mountain-Scale Model for Characterizing Unsaturated flow and Transport in Fractured Tuffs of Yucca Mountain," *Vadose Zone Journal*, Vol. 3, pp.796-805, 2004
42. Zhang, K, **Y. S. Wu**, G. S. Bodvarsson, and H. H. Liu, "Flow Focusing in Unsaturated Fracture Networks: A Numerical Investigation," *Vadose Zone Journal*, Vol. 3, pp.624-633, 2004
43. **Wu, Y. S**. and L. Pan, "Special Relative Permeability Functions with Analytical Solutions for Transient Flow into Unsaturated Rock Matrix," *Water Resources Research*, Vol.39, No. 4, pp.3-1–3-9, 2003
44. Zhang, K., **Y. S. Wu** and G. S. Bodvarsson, "Massively Parallel Computing Simulation of Fluid Flow in the Unsaturated Zone of Yucca Mountain, Nevada," *Journal of Contaminant Hydrology*, pp.381-399, 2003
45. Bodvarsson, G. S., **Y. S. Wu** and K. Zhang, "Development of Discrete Flow Paths in Unsaturated Fractures at Yucca Mountain," *Journal of Contaminant Hydrology*, Vol. 62-63, pp.23-42, 2003
46. Bodvarsson, G. S., E. Kwicklis, C. Shan, and **Y. S. Wu**, "Estimation of Percolation Flux from Borehole Temperature Data at Yucca Mountain, Nevada," *Journal of Contaminant Hydrology*, Vol. 62-63, pp.3-22, 2003
47. Liu, J, G. S. Bodvarsson, and **Y. S. Wu**, "Analysis of flow behavior in fractured lithophysal reservoirs," *Journal of Contaminant Hydrology*, Vol. 62-63, pp.189-211, 2003
48. Haukwa, C. B., Y. W. Tsang, **Y. S. Wu**, and G. S. Bodvarsson, "Effect of Heterogeneity in Fracture Permeability on the Potential for Liquid Seepage into a Heated Emplacement Drift of the potential Repository," *Journal of Contaminant Hydrology*, pp.509-527, Vol. 62-63, 2003
49. Haukwa, C. B., **Y. S. Wu**, and G. S. Bodvarsson, "Modelling Thermal-Hydrological Responses of the Unsaturated Zone of Yucca Mountain, Nevada, to Thermal Load at the Potential Repository," *Journal of Contaminant Hydrology*, Vol. 62-63, pp.529-552, 2003
50. Moridis, G. J., Q. -H. Hu, **Y. S. Wu**, and G. S. Bodvarsson, "Preliminary 3-D Site-Scale Studies of Radionuclide Colloid Transport in the Unsaturated Zone at Yucca Mountain, Nevada," *Journal of Contaminant Hydrology*, Vol. 60, pp.251-286, 2003
51. **Wu, Y. S**., W. Zhang, L. Pan, L.; J. Hinds, and G. S. Bodvarsson, "Modeling Capillary Barriers in Unsaturated Fractured Rock," *Water Resources Research*, Vol. 38, No. 11, 35-1–35-12, 2002
52. Rutqvist, J. **Y. S. Wu**, C. F. Tsang, and G. S. Bodvarsson, "A Modeling Approach for Analysis of Coupled Multiphase Fluid Flow, Heat Transfer, and Deformation in Fractured Porous Rock," *International Journal of Rock Mechanics and Mining Sciences,* Vol. 39, pp.429-442, 2002
53. **Wu, Y. S**., "Numerical Simulation of Single-Phase and Multiphase Non-Darcy Flow in Porous and Fractured Reservoirs," *Transport in Porous Media*, Vol. 49, No. 2, pp.209-240, 2002
54. **Wu, Y. S**., K. Zhang, C. Ding, K, Pruess, and G. S. Bodvarsson, "An Efficient Parallel-Computing Method for Modeling Nonisothermal Multiphase Flow and Multicomponent Transport in Porous and Fractured Media," *Advances in Water Resources*, Vol. 25, pp.243-261, 2002
55. **Wu, Y. S**., "An Approximate Analytical Solution for Non-Darcy Flow in Fractured Media," *Water Resources Research*, Vol.38, No. 3, pp.5-1–5-7, 2002
56. **Wu, Y. S**., L. Pan, W. Zhang, and G. S. Bodvarsson, "Characterization of Flow and Transport Processes within the Unsaturated Zone of Yucca Mountain," *Journal of Contaminant Hydrology*, Vol. 54, pp.215-247, 2002
57. **Wu, Y. S**., "Non-Darcy Displacement of Immiscible Fluids in Porous Media," *Water Resources Research*, Vol. 37, No. 12, pp.2943-2950, 2001

58. **Wu, Y. S**. and P. A Forsyth, "On the Selection of Primary Variables in Numerical Formulation for Modeling Multiphase Flow in Porous Media," *Journal of Contaminant Hydrology*, Vol. 48(3-4), pp.277-304, 2001
59. Elmroth, E., C. Ding, and **Y. S. Wu**, "High Performance Computations for Large Scale Simulations of Subsurface Multiphase Fluid and Heat Flow Simulation," Vol. 18 (3), *Journal of Supercomputing*, pp.235-258, 2001
60. **Wu, Y. S**. and K. Pruess, "Integral Solutions for Transient Fluid Flow through a Porous Medium with Pressure-Dependent Permeability," *International Journal of Rock Mechanics and Mining Sciences*, Vol. 37, No. 1-2, pp.51-61, 2000
61. **Wu, Y. S**. and K. Pruess, "Numerical Simulation of Non-Isothermal Multiphase Tracer Transport in Heterogeneous Fractured Porous Media," *Advances in Water Resources*, Vol. 23, pp.699-723, 2000
62. **Wu, Y. S**., "A Virtual Node Method for Handling Wellbore Boundary Conditions in Modeling Multiphase Flow in Porous and Fractured Media," *Water Resources Research*, Vol. 36, No. 3, pp.807-814, 2000
63. **Wu, Y. S**., A, Ritcey, and G. S. Bodvarsson, "A Modeling Study of Perched Water Phenomena in the Vadose Zone of Yucca Mountain," *Journal of Contaminant Hydrology*, Vol. 38, NOS 1-3, pp.157-184, 1999
64. **Wu, Y. S**., C. Haukwa, and G. S. Bodvarsson, "A Site-Scale Model for Fluid and Heat flow in the Unsaturated Zone of Yucca Mountain, Nevada," *Journal of Contaminant Hydrology*, Vol. 38, NOS 1-3, pp.185-215, 1999
65. Haukwa, C., **Y. S. Wu**, and G. S. Bodvarsson, "Thermal Loading Studies Using the Unsaturated Zone Model," *Journal of Contaminant Hydrology*, Vol. 38, NOS 1-3, pp.217-255, 1999
66. Ritcey, A. C. and **Y. S. Wu**, "Evaluation of the Effects of Future climate change on the Distribution and Movement of Moisture in the Unsaturated Zone of Yucca Mountain, NV," Journal *of Contaminant Hydrology*, Vol. 38, NOS 1-3, pp.257-279, 1999
67. **Wu, Y. S**., K. Pruess, and P. Persoff, "Gas Flow in Porous Media with Klinkenberg Effects," *Transport in Porous Media*, Vol.32, pp.117-137, 1998
68. **Wu, Y. S**. and K. Pruess "A Numerical Method for Simulating Non-Newtonian Fluid Flow and Displacement in Porous Media", Vol. 21, *Advances in Water Resources*, pp.351-362, 1998
69. **Wu, Y. S**., J. B. Kool, P. S. Huyakorn, and Z. A. Saleem, "An Analytical Model for Nonlinear adsorptive Transport through Layered soils," *Water Resources Research*, Vol. 33, No. 1, pp.21-29, 1997
70. Pruess, K., S. Finsterle, G. Moridis, C. Oldenburg, and **Y. S. Wu**, "General-Purpose Reservoir Simulator: the TOUGH2 Family," *CRC Bulletin*, pp.53-57, 1997
71. Huyakorn, P. S., **Y. S. Wu**, and N. S. Park "A Multiphase Approach to the Numerical Solution of a Sharp Interface Saltwater Intrusion Problem-Reply," *Water Resources Research*, Vol. 33, No. 11, pp.2619, 1997
72. Panday, S., **Y. S. Wu**, P. S. Huyakorn, S. C. Wade, and Z. A. Saleem, "A Composite Numerical Model for Assessing Subsurface Transport of Oily Wastes and Chemical Constituents," *Journal of Contaminant Hydrology*, Vol. 25 (1-2), pp.39-62, 1997
73. **Wu, Y. S**., P. A. Forsyth, and H. Jiang, "A Consistent Approach for Applying Numerical Boundary Conditions for Subsurface Flow," *Journal of Contaminant Hydrology*, Vol. 23, pp.157-185, 1996
74. Huyakorn, P. S., **Y. S. Wu**, and N. S. Park "A Multiphase Approach to the Numerical Solution of a Sharp Interface Saltwater Intrusion Problem," *Water Resources Research*, Vol. 32, No. 1, pp.93-102, 1996
75. Panday, S., P. A. Forsyth, R. W. Falta, **Y. S. Wu**, and P. S. Huyakorn, "Considerations for Robust Compositional Simulations of Subsurface NAPL Contamination and Remediation," *Water Resources Research*, Vol. 31, No. 5, pp.1273-1289, 1995

76. Forsyth, P. A. **Y. S. Wu**, and K. Pruess, "Robust Numerical Methods for Saturated-Unsaturated Flow with Dry Initial Conditions in Heterogeneous Media," *Advances in Water Resources*, Vol. 17, pp.25-38, 1995
77. Huyakorn, P. S., **Y. S. Wu**, and N. S. Park, "An Improved Sharp-Interface Model for Assessing NAPL Contamination and Remediation of Groundwater Systems," *Journal of Contaminant Hydrology*, Vol. 16, pp.203-234, 1994
78. Huyakorn, P. S., S. Panday, and **Y. S. Wu**, "A Three-Dimensional Multiphase Flow Model for Assessing NAPL Contamination in Porous and Fractured Media, I. Formulation," *Journal of Contaminant Hydrology*, Vol. 16, pp.109-130, 1994
79. **Wu, Y. S**., P. S. Huyakorn, and N. S. Park, "A Vertical Equilibrium Model for Assessing NAPL Contamination and Remediation of Groundwater Systems," *Water Resources Research*, Vol. 30, No. 4, pp.913-927, 1994
80. Panday S, **Y. S. Wu**, and P. S. Huyakorn, "A Three-Dimensional Multiphase Flow Model for Assessing NAPL Contamination in Porous Media and Fractured Media, II. Porous Medium Simulation Examples," *Journal of Contaminant Hydrology*, Vol. 16, pp.131-156, 1994
81. **Wu, Y. S.**, K. Pruess, and Z.X. Chen, "Buckley-Leverett Flow in Composite Porous Media," *SPE Advanced Technology Series*, Vol. 1, No. 2, pp.36-42, 1993
82. Pruess, K. and **Y. S. Wu**, "A New Semi-Analytical Method for Numerical Simulation of Fluid and Heat Flow in Fractured Reservoirs," *SPE Advanced Technology Series*, Vol. 1, No. 2, pp.63-72, 1993
83. **Wu, Y. S**., K. Pruess, and P.A. Witherspoon, "Flow and Displacement of Bingham Non-Newtonian Fluids in Porous Media," *SPE Reservoir Engineering*, pp.369-376, 1992
84. **Wu, Y. S**., K. Pruess, and P.A. Witherspoon, "Displacement of a Newtonian Fluid by a Non-Newtonian Fluid in a Porous Media," Research Report, LBL-27412, Lawrence Berkeley laboratory; *Transport in Porous Media*, Vol. 6, pp.115-142, 1991
85. Persoff, P, K. Pruess, S. M. Benson, **Y. S. Wu**, C. J. Radke, and P. A. Witherspoon, "Aqueous Foams for Control of Gas Migration and Water Coning in Aquifer Gas Storage," *Energy Sources*, Vol. 12, No.2, pp.479-497, 1990
86. **Wu, Y. S**. and K. Pruess, "An Analytical Solution for Wellbore Heat Transmission in Layered Formations," *SPE Reservoir Engineering*, pp.531-538, 1990
87. **Wu, Y. S**. and K. Pruess, "A Multiple-Porosity Method for Simulation of Naturally Fractured Petroleum Reservoirs," *SPE Reservoir Engineering, Trans*. AIME vol. 285, pp.327-336, 1988
88. Pruess, K., C. Calore, R. Celati, and **Y. S. Wu**, "An Analytical Solution for Heat Transfer at a Boiling Front Moving through Porous Medium," *International. J. Heat and Mass Transfer,* Vol. 30, No. 12, pp.2595-2602, 1987
89. **Wu, Y. S**. and J. L. Ge, "The Transient Flow in Naturally Fractured Reservoirs with Three-Porosity Systems," Acta, Mechanica Sinica, *Theoretical and Applied Mechanics*, Beijing, China, Vol. 15, No. 1, pp.81-85, 1983
90. Ge, J. L. and **Y. S. Wu**, "The Behavior of Naturally Fractured Reservoirs and the Technique of Well Test Analysis at Constant Pressure Production," *J. of Petroleum Exploration & Development*, Beijing, China, 1982
91. Ge, J. L., Z. A. Luan, and **Y. S. Wu**, "Filtration Model Study and Well Test Analysis of Carbonate Reservoirs with Uniform Fracture Distribution," *Oil Field Development*, Vol. 1, pp.94-106, the Chinese Petroleum Engineering Society, Beijing, China, 1982
92. **Wu, Y. S**. and J. L. Ge, "Application of the Hankel Transformation to Transient Flow Problems in Reservoirs," *J. of Southwest Petroleum Inst.*, Vol. 3, No. 1, China, 1982
93. **Wu, Y. S**. and J. L. Ge, "The Flow of Fluids in a Region with Variable Permeability near a Well in a Naturally Fractured Composite Reservoir," *J. of Petroleum Exploration & Development*, Vol. 8, No. 4, pp.58-67, 1981

94. **Wu, Y. S**. and J. L. Ge, "A Study of the Transient Spherical Flow in Naturally Fractured Reservoirs," *J. of Southwest Petroleum Inst.*, Vol. 2, No. 1, pp.39-49, 1981.

Books/Book Chapters

1. Winterfeld, P. H. and **Yu-Shu Wu**, "Simulation of CO2 Sequestration in Brine Aquifers with Geomechanical Coupling," Chapter of the Book: "Computational Models for CO2 Sequestration and Compressed Air Energy Storage," Taylor & Francis /CRC Press, 2014
2. **Wu, Yu-Shu**, "Non-Darcy Flow Behavior Near High-Flux Injection Wells in Porous and Fractured Formations," Chapter 18 of *Developments in Water Science 52,* Edited by Chin-Fu Tsang and John A. Apps, Elsevier, 2005
3. **Wu, Yu-Shu**, "A Unified Numerical Framework Model for Simulating Flow, Transport, and Heat Transfer in Porous and Fractured Media," *Developments in Water Science* 52, Edited by Cass T. Miller, Matthew W. Farthing, William G. Gray, and George F. Pinder, Elsevier, 2004
4. Zhang, K, **Y. S. Wu**, G. S. Bodvarsson, and H. H. Liu, "Determination of Unsaturated Flow Paths in a 2-D Randomly Distributed Fracture Network," Book Chapter of *Groundwater Quality Modeling and Management Under Uncertainty*, Editor: Srikanta Mishra, Published: *American Society of Civil Engineers*, ISBN: 0-7844-0696-0, 2003
5. **Wu, Y. S**., K. Zhang, and K, Pruess, "Massively Parallel Simulation of Flow and Transport in Porous in Variably Saturated Porous and Fractured Media," *Developments in Water Science* 47, Edited by S. M. Hassanizadeh, R. J. Schotting, W. G. Gray, and G. F. Pinder, Computational Methods in Water Resources, Vol. 1, pp.289-296, 2002
6. Bodvarsson, G., H. H. Liu, C. F. Ahlers, **Y. S. Wu**, and E. Sonnenthal, "Parameterization and Upscaling in Modeling Flow and Transport in the Unsaturated Zone of Yucca Mountain," Chapter 11 of "*Conceptual Models of Flow and Transport in the Fractured Vadose Zone*," National Research Council, National Academy Press, Washington, pp.335-365, 2001
7. **Wu, Yu-Shu**, "On the Effective Continuum Method for Modeling Multiphase Flow, Multicomponent Transport and Heat Transfer in Fractured Rock," "*Dynamics of Fluids in Fractured Rocks, Concepts and Recent Advances*", Edited by B. Faybishenko, P. A. Witherspoon and S. M. Benson, AGU Geophysical Monograph 122, American Geophysical Union, Washington, DC, pp.299-312, 2000
8. Bodvarsson, G. S., S Finsterlie, H. H. Liu, C. M. Oldenburg, K. Pruess, E. Sonnenthal, and **Y. S. Wu**, "Flow and Transport Modeling of the Vadose Zone," Chapter 5 of "*Vadose Zone Science and Technology Solutions*," Edited by B. B. Looney and R. W. Falta, Battelle Press, Columbus, Richland, pp.591-827, 2000
9. **Wu, Y. S**., S. Finsterle, and G. S. Bodvarsson, "Field-Scale Modeling Studies to Characterize Hydraulic Properties for Water, Air and Heat Flow in the Unsaturated Zone of Yucca Mountain," *Characterization and Measurement of the Hydraulic Properties of Unsaturated Porous Media, edited by M. Th. Van Genuchten, Leij, F. J. and Wu, L.*, Published by the University of California, Riverside, pp.1537-1548, 1999
10. **Wu, Y. S**. and K. Pruess, "*Flow of Non-Newtonian Fluids Through Porous Media*," Volume 3, Chapter 2, *Advances in Porous Media*, Edited by M. Y. Corapcioglu, Elsevier Science Publishers, pp.87-179, 1997
11. **Wu, Yu**-Shu, "A numerical method for simulating non-Newtonian fluid flow and displacement in porous media," *Computational Methods in Water Resources* Xi, Vol 1: *Computational Methods in Subsurface Flow and Transport Problems*, pp.109-119, 1996
12. **Wu, Y. S**., P. S. Huyakorn, and S. Panday, "A Numerical Model for Multiphase Flow and Transport Assessment of Migration of Petroleum Contaminants in the Subsurface," *Engineering Hydrology*, Edited by Chin Y. Kuo, San Francisco, CA, pp.964-969, 1993

13. Park, N. S., P. S. Huyakorn, **Y. S. Wu**, and M. D. Barcelo, "A Sharp-Interface Salt Water Intrusion Code for Layered Aquifer Systems," *Engineering Hydrology*, Edited by Chin Y. Kuo, San Francisco, CA, pp.1159-1164, 1993

SPE Papers

1. Cong Wang and **Yu-Shu Wu**, "Modeling Analysis of Transient Pressure and Flow Behavior at Horizontal Wells with Multi-Stage Hydraulic Fractures in Shale Gas Reservoirs," SPE 168966, prepared for presentation at the SPE Unconventional Resources Conference - USA held in The Woodlands, Texas, USA, 1-3 April 2014
2. Xu Wang, Philip Winterfeld, Xu Ma, Dengsheng Ye, Jijun Miao, Yonghong Wang, Cong Wang, and **Yu-Shu Wu**, "Simulation of Coupled Hydraulic Fracturing Propagation and Gas Well Performance in Shale Gas Reservoirs," SPE 168967, prepared for presentation at the SPE Unconventional Resources Conference - USA held in The Woodlands, Texas, USA, 1-3 April 2014
3. Perapon Fakcharoenphol, Basak Kurtoglu, Hossein Kazemi, Sarinya Charoenwongsa, and **Yu-Shu Wu**, "The Effect of Osmotic Pressure on Improve Oil Recovery from Fractured Shale Formation," SPE 168998, prepared for presentation at the SPE Unconventional Resources Conference - USA held in The Woodlands, Texas, USA, 1-3 April 2014.
4. Ding, Didier and **Yu-Shu Wu**, "Numerical Simulation of Low-Permeability Unconventional Gas Reservoirs," paper number: 14UNCV-167711-MS, prepared for the SPE/EAGE European Unconventional Resources Conference & Exhibition, Reed Messe Wien, Vienna, Austria, 25-27 February, 2014
5. Xiong, Yi, Perapon Fakcharoenphol, Philip Winterfeld, Ronglei Zhang, and **Yu-Shu Wu**, "Coupled Geomechanical and Reactive Geochemical Model for Fluid and Heat Flow: Application for Enhanced Geothermal Reservoir," SPE 165982, prepared for presentation at the SPE Reservoir Characterisation and Simulation Conference and Exhibition held in Abu Dhabi, UAE, 16–18 September 2013
6. Li, Ning, Qiquan Ran, Jianfang Li, Jiangru Yuan, **Yu-Shu Wu,** and Cong Wang, "A Multiple-Continuum Model for Simulation of Gas Production from Shale Gas Reservoirs," SPE-165991, prepared for presentation at the SPE Reservoir Characterisation and Simulation Conference and Exhibition held in Abu Dhabi, UAE, 16–18 September 2013
7. Guo, Chaohua, Baojun Bai, Mingzhen Wei, Xiaoming He, and **Yu-Shu Wu**, "Study on Gas Flow in Nano Pores of Shale Gas Reservoirs," SPE 167179, prepared for presentation at the SPE Unconventional Resources Conference-Canada held in Calgary, Alberta, Canada, 5–7 November 2013
8. Fakcharoenphol, Perapon, Mehmet Torcuk, Antoine Bertoncello, Hossein Kazemi, and **Yu-Shu Wu**, "Managing Shut-in Time to Enhance Gas Flow Rate in Hydraulic Fractured Shale Reservoirs: a Simulation Study," SPE 166098, prepared for presentation at the SPE Annual Technical Conference and Exhibition held in New Orleans, Louisiana, USA, 30 September–2 October 2013
9. **Wu, Yu-Shu**, Jianfang Li, Didier Ding, Cong Wang, and Yuan Di, "A Generalized Framework Model for Simulation of Gas Production in Unconventional Gas Reservoirs," SPE-163609, to be presented at the SPE Reservoir Simulation Symposium held in The Woodlands, Texas USA, 18–20 February 2013
10. Wang, Cong, Didier Ding, and **Yu-Shu Wu**, "Characterizing Hydraulic Fractures in Shale Gas Reservoirs Using Transient Pressure Tests," SPE-163819, to be presented at the SPE Hydraulic Fracturing Technology Conference, The Woodlands, TX, USA, 4 – 6 February 2013
11. Zhang, R., X. Yin, **Y. S. Wu**, and P. H. Winterfeld, "A Fully Coupled Model for Nonisothermal Multiphase Flow, Solute Transport and Reactive Chemistry in Porous Media," SPE-159380, to be

presented at the 2012 SPE ATCE, San Antonio, TX, Oct, 2012

12. Perapon Fakcharoenphol, Sarinya Charoenwongsa, Hossein Kazemi, and **Yu-Shu Wu**, "The Effect of Water-Induced Stress to Enhance Hydrocarbon Recovery in Shale Reservoirs," SPE-158053, to be presented at the 2012 SPE ATCE, San Antonio, TX, Oct, 2012
13. **Wu, Yu-Shu,** Cong Wang, Jianfang Li, and P. Fackahroenphol, "Transient Gas Flow in Unconventional Gas Reservoirs," SPE-154448, presented at the EAGE Annual Conference & Exhibition incorporating SPE Europec held in Copenhagen, Denmark, 4–7 June 2012
14. Aladasani, A., Baojun Bai, **Yu-Shu Wu**, "Investigating Low-Salinity Waterflooding Recovery Mechanisms in Sandstone Reservoir," SPE 152997, presented at the Eighteenth SPE Improved Oil Recovery Symposium held in Tulsa, Oklahoma, USA, 14-18 April 2012
15. **Wu, Yu-Shu** and Cong Wang, "Transient Pressure Testing Analysis of Gas Wells in Unconventional Reservoirs," SPE-SAS-312, presented at the 2012 SPE Annual Technical Symposium & Exhibition (ATS&E), Khobar, Saudi Arabia, 8-11 April 2012
16. Aladasani, A., Baojun Bai, **Yu-Shu Wu**, "Investigating Low Salinity Waterflooding Recovery Mechanisms in Carbonate Reservoir," SPE 155560, prepared for the SPE EOR Conference at Oil and Gas West Asia held in Muscat, Oman, 16–18 April 2012
17. Kiani, M., H. Kazemi, E. Ozkan, and **Y.S. Wu**, "Pilot Testing Issues of Chemical EOR in Large Fractured Carbonate Reservoirs," SPE-146840, prepared for presentation at the SPE Annual Technical Conference and Exhibition held in Denver, Colorado, USA, 30 October–2 November 2011
18. **Wu, Yu-Shu** and P. Fackahroenphol, "A Unified Mathematical Model for Unconventional Reservoir Simulation," SPE-142884, submitted for the SPE EUROPEC Conference, 23-26 May 2011 in Vienna, Austria, 2011
19. Winterfeld, P. H. and **Yu-Shu Wu**, "Parallel Simulation of CO2 Sequestration with Rock Deformation in Saline Aquifers," SPE-141514, prepared for presentation at the SPE Reservoir Simulation Symposium held in The Woodlands, Texas, USA, 21–23 February 2011
20. Di, Yuan, **Yu-Shu Wu**, Binshan Ju, Jishun Qin, and Xinmin Song, "A Practical Compositional Method for Simulation of CO2 Flooding in Porous and Fractured Petroleum Reservoirs," SPE-145096, Prepared for presentation at the SPE Asia Pacific Oil and Gas Conference and Exhibition held in Jakarta, Indonesia, 20–22 September 2011
21. Ajab Al-Otaibi and Yu-Shu Wu, "An Alternative Approach to Modeling Non-Darcy Flow for Pressure Transient Analysis in Porous and Fractured Reservoirs," SPE-SAS-984, prepared for presentation at the 2011 SPE Saudi Arabia Section Technical Symposium and Exhibition held in AlKhobar, Saudi Arabia, 15–18 May 2011
22. **Wu, Yu-Shu**, Perapon Fakcharoenphol, and Ronglei Zhang, "Non-Darcy Displacement in Linear Composite and Radial Flow Porous Media," SPE-129963, presented at the SPE EUROPEC/EAGE Annual Conference and Exhibition held in Barcelona, Spain, 14–17 June 2010
23. Ju, Binshan, Jishun Qin, Xinglong Chen, Tailiang Fan, and **Yu-Shu Wu**, "Modeling Formation Damage and Wettability Alteration Induced by Asphaltene Precipitation and Their Effects on Percolation Performances during Oil Production," SPE-129803, presented at the CPS/SPE International Oil & Gas Conference and Exhibition in China, Beijing, China, 8-10 June 2010
24. Al-Otaibi, Ajab and **Yu-Shu Wu**, "Transient Behavior and Analysis of Non-Darcy Flow in Porous and Fractured Reservoirs According to the Barree and Conway Model," SPE-133533, presented at the at the Western North America Regional Meeting, held in Anaheim, California, USA, 26–30 May 2010
25. Akinboyewa, John, Swapan K. Das, **Yu-Shu Wu**, and Hossein Kazemi, "Simulation of Expanding Solvent – Steam Assisted Gravity Drainage in a field case of a bitumen oil reservoir," SPE-130343, presented presentation at the 2010 SPE Improved Oil Recovery Symposium held in Tulsa, Oklahoma, USA, 24–28 April 2010

26. **Wu, Y. S**., B. Lai, J. L. Miskimins, and Y. Di, "Simulation of Multiphase Non-Darcy Flow in Porous and Fractured Media," SPE-122612, presented at the 2009 SPE Annual Technical Conference and Exhibition held in New Orleans, Louisiana, USA 4-7 October 2009
27. **Wu, Yu-Shu** and Kenzi Kirasaki, "Conceptualization and Modeling of Flow and Transport Through Fault Zones," SPE-122456, presented at the 2009 SPE Latin American & Caribbean Petroleum Engineering Conference, held 31-MAY-09 to 03-JUN-09 in Cartagena, Colombia
28. Lai, Bitao, Jennifer L. Miskimins, and **Yu-Shu Wu**, "Non-Darcy Porous Media Flow According to the Barree and Conway Model: Laboratory and Numerical Modeling Studies," SPE-122611, presented at the 2009 Rocky Mountain Petroleum Technology Conference, held in Denver, CO., 14-APR to 16-APR, 2009
29. **Wu, Yu-Shu** and Baojun Bai, "Efficient Simulation for Low-Salinity Waterflooding in Porous and Fractured Reservoirs," SPE-118830, presented at the 2009 SPE Reservoir Simulation Symposium to be held in The Woodlands, Texas, USA, 2–4 February 2009
30. **Wu, Yu-Shu**, G. Moridis, B. Bai, and K. Zhang "A Multi-Continuum Model for Gas Production in Tight Fractured Reservoirs," SPE-118944, prepared for presentation at the 2009 Hydraulic Fracturing Technology Conference to be held in The Woodlands, Texas, USA, 19–21 January 2009
31. **Wu, Yu-Shu** and Baojun Bai, "Modeling Particle Gel Propagation in Porous Media," SPE-115678, prepared for the 2008 SPE Annual Technical Conference and Exhibition held in Denver, Colorado, USA, 21-24 September 2008
32. Yuan, Shiyi, Jie Song, Zhengdong Lei, Jiangru Yuan, and **Yu-Shu Wu**, "A Mathematical Model for Emulsion Mobilization and Its Effect on EOR during ASP Flooding," SPE-113145, prepared for the 2008 SPE Improved Oil Recovery Symposium, held in Tulsa, OK, April 21- 23, 2008
33. Xiong, Wei, Qun Lei, Jiangru Yuan, Shusheng Gao, and **Yu-Shu Wu**, "Behavior of Flow through Low-Permeability Reservoirs," SPE-113144, prepared for presentation at the 2008 SPE EUROPEC Conference, held in Rome, Italy, 9-12 June 2008
34. **Wu, Yu-Shu**, Christine Ehlig-Economides, Guan Qin, Zhijiang Kang, Wangming Zhang Babatunde Ajayi, and Qingfeng Tao, "A Triple Continuum Pressure Transient Model for A Naturally Fractured Vuggy Reservoir," SPE-110044, presented at the 2007 SPE Annual Technical Conference and Exhibition, held in Anaheim, California, 11–14 November 2007
35. Qin, Lei, Wei Xiong, Jiangru Yuan, Yuquan Cui, and **Yu-Shu Wu**, "Analysis of Stress Sensitivity and Its Influence on Oil Production from Tight Reservoirs," SPE-111148, presented at the 2007 SPE Eastern Regional Meeting held in Lexington, Kentucky, U.S.A., 17–19 October 2007
36. **Wu, Yu-Shu**, Guoping Lu, Keni Zhang, and G. S. Bodvarsson, "An Integrated Modeling Approach for Characterizing Multiphase Flow, Chemical Transport, and Heat Transfer in Fractured Reservoirs, SPE-106996, presented at the SPE Europec/EAGE Annual Conference and Exhibition held in London, United Kingdom, 11–14 June 2007
37. Zhang, K, Christine Doughty, **Yu-Shu Wu**, and Karsten Pruess, Efficient Parallel Simulation of CO2 Geologic Sequestration in Saline Aquifers, SPE-106026, presented at *2007 SPE* Reservoir Simulation Symposium, Houston, TX, 26-28 February, 2007
38. **Wu, Yu-Shu**, Guan Qin, Richard E. Ewing, Yalchin Efendiev, Zhijiang Kang and Yulin Ren, "A Multiple-Continuum Approach for Modeling Multiphase Flow in Naturally Fractured Vuggy Petroleum Reservoirs," SPE-104173, presented at the 2006 SPE International Oil & Gas Conference and Exhibition in China held in Beijing, China, 2006
39. Kang, Zhijiang, **Yu-Shu Wu**, Jianglong Li, Yongchao Wu, Jie Zhang, and Guangfu Wang, "Modeling Multiphase Flow in Naturally Fractured Vuggy Petroleum Reservoirs," SPE-102356, presented at the SPE Annual Technical Conference and Exhibition, San Antonio, TX, USA, September 24-27, 2006
40. Shen, Pingping, Bin Zhu, Xian-Bin Li, and **Yu-Shu Wu**, "The Influence of Interfacial Tension on

Water-Oil Two-Phase Relative Permeability," SPE-95405, presented at the 2006 SPE/DOE Symposium on Improved Oil Recovery held in Tulsa, Oklahoma, U.S.A., April 22–26, 2006

41. Zhang, K, **Yu-Shu Wu**, Karsten Pruess, Chris Ding, and Erik Elmroth, "Parallel Computing Techniques for Large-Scale Reservoir Simulation of Multi-Component and Multiphase Fluid Flow," SPE-66343, presented at 2001 SPE Reservoir Simulation Symposium, Houston, TX, 11-14 February, 2001
42. **Wu, Y. S**., K. Pruess, and P.A. Witherspoon, "Flow and Displacement of Bingham Non-Newtonian Fluids in Porous Media," SPE 20051, presented at the 1990 SPE California Regional Meeting, Ventura, CA, April 1990
43. Pruess, K. and **Y. S. Wu**, "A New Semi-Analytical Method for Numerical Simulation of Fluid and Heat Flow in Fractured Reservoirs," 1993; SPE 18426, presented at the 1989 10th SPE Reservoir Simulation Symposium in Houston, TX, Feb. 1989
44. **Wu, Y. S**. and K. Pruess, "An Analytical Solution for Wellbore Heat Transmission in Layered Formations," SPE 17497, presented at the 1988 SPE California Regional Meeting, Long Beach, CA, March 1988
45. **Wu, Y. S**. and K. Pruess, "A Multiple-Porosity Method for Simulation of Naturally Fractured Petroleum Reservoirs," SPE 15129, presented at the 1986 SPE California Regional Meeting, Oakland, CA, April 1986

Conference Papers and presentations

1. Shihao Wang, Yi Xiong, Philip Winterfeld, Keni Zhang, and **Yu-Shu Wu**, "Parallel Simulation of Thermal-Hydrological-Mechanical (THM) Processes in Geothermal Reservoirs," PROCEEDINGS, Stanford Geothermal Workshop, Stanford, California, February 24-26, 2014
2. Yi Xiong, Litang Hu and **Yu-Shu Wu**, "Coupled Geomechanical and Reactive Geochemical Simulations For Fluid And Heat Flow in Enhanced Geothermal Reservoirs." PROCEEDINGS, Thirty-Eighth Workshop on Geothermal Reservoir Engineering Stanford University, Stanford, California, February 11-13, 2013
3. HUANG Lin, DI Yuan, KANG Zhijiang, and **WU Yu-Shu**, "Flow Characteristics Analysis for Vugs-In-Series Model of Fractured-Vuggy Carbonate Reservoirs," The 12th National Conference on Fluid Flow in Porous Media (NCFFPM 2013), Qingdao, P.R. China, August 8-10th, 2013
4. DAI Yafei, DI Yuan **WU Yu-Shu**, and KANG Zhijiang, "VOF Simulation of Oil-Water Two Phase Flow in Vuggy Regions for The Naturally Fractured-Vuggy Reservoirs," The 12th National Conference on Fluid Flow in Porous Media (NCFFPM 2013), Qingdao, P.R. China, August 8-10th, 2013
5. Winterfeld, Philip H., **Yu-Shu Wu**, Karsten Pruess, Curtis Oldenburg, "Development of an Advanced Thermal-Hydrologic-Mechanical Model for CO2 Storage in Porous and Fractured Saline Aquifers," presented at the 2012 TOUGH Symposium, Lawrence Berkeley National Laboratory, Berkeley, September 17-19, 2012
6. Zhang, Ronglei, Xiaolong Yin, Philips H. Winterfeld, **Yu-Shu Wu**, "A Fully Coupled Model for Nonisothermal Multiphase Flow, Geomechanics, and Geochemistry during CO2 Sequestration in Brine Aquifers," presented at the 2012 TOUGH Symposium, Lawrence Berkeley National Laboratory, Berkeley, September 17-19, 2012
7. Fakcharoenphol, Perapon, Litang Hu, **Yu-Shu Wu,** Sarinya Charoenwongsa, Hossein Kazemi, "A Fully Coupled Flow and Geomechanics Model: Application to Enhanced Geothermal Reservoirs," presented at the 2012 TOUGH Symposium, Lawrence Berkeley National Laboratory, Berkeley, September 17-19, 2012
8. Hu, Litang, Philip H. Winterfeld, Perapon Fakcharoenphol, Yu-Shu Wu, Keni Zhang, Tianfu Xu, "A

Novel, Fully Coupled Flow and Geomechanics Model in Porous and Fractured Geothermal Reservoirs," presented at the 2012 TOUGH Symposium, Lawrence Berkeley National Laboratory, Berkeley, September 17-19, 2012

9. Winterfeld, P. H. and Y.-S. Wu, "A Novel Fully Coupled Geomechanical Model for CO2 Sequestration in Fractured and Porous Brine Aquifers," presented at the XIX International Conference on Water Resources, CMWR 2012
10. Perapon Fakcharoenphol, Ahmad Jamili, and **Yu-Shu Wu**, "A coupled flow-geomechanics model for fluid and heat flow in porous and fractured rock," submitted for the 45th U.S. Rock and Geomechanics Symposium of ARMA, 26 - 29 June, 2011, San Francisco, California, USA, 2011
11. Winterfeld, P. H. and Yu-Shu Wu, "Numerical Simulation of CO2 Sequestration in Saline Aquifers with Geomechanical Effects," presented at the10th Annual Conference on Carbon Capture & Sequestration, Pittsburgh, PA, May 2 - May 5 2011
12. Fackahroenphol, P., A. Jamili, and **Y. S. Wu**, "A coupled flow-geomechanics model for fluid and heat flow in porous and fractured rock", presented at the Geological Society of America Annual meeting, Denver, Colorado, Abstract No. 181353, Vol. 42, No. 5, 2010
13. Fakcharoenphol, Perapon and **Yu-Shu Wu**, "Displacement of Non-Newtonian Fluids in Linear and Radial Composite Porous Media," Proceedings of the 3nd International Conference on Porous Media and its Applications in Science and Engineering ICPM3, Montecatini, Italy, June 20-25, 2010
14. **Wu, Y. S**., B. Lai, and J. Miskimins, "Simulation of Non-Darcy Porous Media Flow according to the Barree and Conway Model," PROCEEDINGS, TOUGH Symposium 2009, Lawrence Berkeley National Laboratory, Berkeley, CA, September 14–16, 2009
15. **Wu, Y. S**., Zhijiang Kang, Yuan Di, Thanh Nguyen, and Perapon Fakcharoenphol, "A Multiple-Continuum Model for Simulating Single-Phase and Multiphase Flow in Naturally Fractured Vuggy Reservoirs," PROCEEDINGS, TOUGH Symposium 2009, Lawrence Berkeley National Laboratory, Berkeley, CA, September 14–16, 2009
16. Kenzi Karasaki, Kazumasa Ito, **Yu-Shu Wu**, Michito Shimo, Atsushi Sawada,Keisuke Maekawa, and Koichiro Hatanaka, "Uncertainty Reduction of Hydrologic Models using Data From Surface-Based Investigation," PROCEEDINGS, TOUGH Symposium 2009, Lawrence Berkeley National Laboratory, Berkeley, CA, September 14–16, 2009
17. Pan, L., C. M. Oldenberg, **Yu-Shu Wu**, and K. Pruess, Wellbore flow model for carbon dioxide and brine, GHGT-9, 9th International Conference on Greenhouse Gas Control Technologies, 16 - 20 November 2008. *Energy Procedia*, Elesvier, 2008
18. **Wu, Y. S**., J. Rutqvist, K. Karasaki, Q. Lei, W. Xiong, J. Yuan, M. Liu, and Y. Di, "A mathematic Model for Rock Deformation Effect of Flow in Porous and Fractured Reservoirs," ARMA 08-142, Presented at San Francisco 2008, the 42nd US Rock Mechanics Symposium and 2nd U.S.-Canada Rock Mechanics Symposium, held in San Francisco, June 29-July 2, 2008
19. Keni Zhang and **Yu-Shu Wu**, "Large-scale Discrete Fracture Network Multiphase Flow Simulations Using TOUGH2-MP," *Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract* H12A-03, 1522, 2007**.**
20. Pan, F., J. Zhu, M. Ye, Y**. S. Wu**, Z. Yu, and B. Hu, "Sensitivity Analysis of Hydraulic Parameters on Radionuclide Transport Uncertainty in the Unsaturated Zone of Yucca Mountain," *Eos Trans. AGU, 88(52), Fall Meet. Suppl., Abstract* H13BA-1300, 2007**.**
21. **Wu, Yu-Shu** and Keni Zhang, "Modeling Flow and Transport in Fractured Vuggy Formation," Presented at the GSA 2007 Annual Meeting, Denver, Colorado, Oct. 28-31, 2007.
22. **Wu, Yu-Shu** and Guan Qin, "A Generalized Numerical Approach for Modeling Multiphase Flow and Transport in Fractured Porous Media," Invited Presentation, Inaugural Conference on Computational Methods in Energy and Environmental Research, Sponsored by Beijing University and NSF, USA, Beijing China, July 9-12, 2007
23. **Wu, Y. S**., "Estimating the Fracture Hydraulic Conductivity of the Vadose Zone Using Barometric

Pressure Data," Presented at the 2007 International Groundwater Forum, Nanjing, China, June 22-23, 2007

24. **Wu, Y. S**., "An Integrated Methodology for Characterizing Flow and Transport Processes in Fractured Rock," LBNL-63411, Presented at the TIPACES 6th Annual meeting, Wuhan, China June 25-28, 2007
25. Pan, F. M. Ye, **Y. S. Wu**, and B. Hu, "Simulation of Radionuclide Transport in Heterogeneous Unsaturated Zone of Yucca Mountain," *Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract* H23C-1522, 2006
26. **Wu, Y. S**., "Multiple-Continuum Approaches for Modeling Multiphase Flow, Heat Transfer and Chemical Transport in Fractured Rock," LBNL-59782 Abs., Western Pacific Geophysics Meeting, Beijing, China, July 24-27, 2006
27. **Wu, Y. S**., "A Mountain-Scale 3-D Numerical Model for Characterizing Unsaturated Flow and Transport in Fractured Volcanic Rock at Yucca Mountain," LBNL-59801 Abs., Western Pacific Geophysics Meeting, Beijing, China, July 24-27, 2006
28. **Wu, Yu-Shu**, S. Mukhopadhyay, K. Zhang, and G. S. Bodvarsson, "Modeling Coupled Processes of Multiphase Flow and Heat Transfer in Unsaturated Fractured Rock," LBNL-58677, Presented at CMWR XVI - Computational Methods in Water Resources XVI International Conference, Copenhagen, Denmark, June 19-22, 2006
29. **Wu, Yu-Shu** and P. A. Forsyth, "Efficient Schemes for Reducing Numerical Dispersion in Modeling Multiphase Transport through Porous and Fractured Media," LBNL-60056, Presented at TOUGH Symposium 2006, Lawrence Berkeley National Laboratory, Berkeley, CA, May 15-17, 2006
30. Kang, Zhijiang, **Yu-Shu Wu**, Jianglong Li, Yongchao Wu, Jie Zhang, and Guangfu Wang, "A Triple-Continuum Numerical Model for Simulating Multiphase Flow in Vuggy Fractured Reservoirs," LBNL-58676, Presented at CMWR XVI - Computational Methods in Water Resources XVI International Conference, Copenhagen, Denmark, June 19-22, 2006
31. **Wu, Yu-Shu**, Sumit Mukhopadhyay, Keni Zhang, and G. S. Bodvarsson, "The Influence of Proposed Repository Thermal Load on Multiphase Flow and Heat Transfer in the Unsaturated Zone of Yucca Mountain," LBNL-59783, Presented at the 2006 International High Level Radioactive Waste Management Conference, Las Vegas, NV, April 30 - May 4, 2006
32. Pan, Feng, Ming Ye, **Yu-Shu Wu**, Bill Hu, Graig Shirley, and Zhongbo Yu "Yucca Mountain Unsaturated Zone Radionuclide Transport Uncertainty Assessment," Presented at the 2006 International High Level Radioactive Waste Management Conference, Las Vegas, NV, April 30 - May 4, 2006
33. Zhang, Keni, **Yu-Shu Wu** and J. Houseworth, "Parameter Sensitivity Analyses for a Large-Scale Unsaturated Flow Model, " *Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract* H13A-1331, 2005
34. Pan, F. M. Ye, **Y. S. Wu**, B. Hu, and Z. Yu, "Assessment of Uncertainty of Radionuclide Transport in the Yucca Mountain Unsaturated Zone: Parametric and Parameter Estimation Uncertainty," *Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract* H11D-1292, 2005
35. Pan, Feng, Ming Ye, Zhongbo Yu, **Yu-Shu Wu**, Bill Hu, and Graig Shirley, "Uncertainty Analysis of Radionuclide Transport in the Unsaturated Zone at Yucca Mountain," Paper No. 193-18, Presented at 2005 Salt Lake City Annual Meeting, The Geological Society of America (GSA), October 16-19, 2005
36. **Wu, Yu-Shu** and Karsten Pruess, "A Physically Base Numerical Approach for Fracture-Matrix Interaction in Fractured Reservoirs," LBNL-55004, Submitted to the ***World Geothermal Congress 2005***, Antalya, Turkey, April 24-29, 2005
37. Pruess, Karsten; Xu, Tianfu; Shan, Chao; Zhang, Yingqi; **Wu, Yu-Shu**; Sonnenthal, Eric; Spycher, Nicolas; Rutqvist, Jonny; Zhang, Guoziang; Kennedy, Mack Geothermal Reservoir Dynamics – TOUGHREACT, LBNL-57497, Enhanced Geothermal Systems (EGS) Peer Review , Rockville,

MD , April 7-8, 2005

38. *Wu, Yu-Shu*, "A Unified Numerical Framework Model for Simulating Flow, Transport, and Heat Transfer in Porous and Fractured Media," LBNL-54589**,** the Computational methods in Water Resources (CMWR) 2004 International Conferences, Chapel Hill, NC, June 13-17, 2004
39. **Wu, Yu-Shu** and Lehua Pan, "Analytical Solutions for Transient Flow through Unsaturated Fractured Porous Media," LBNL-54275, Proceedings of the Second International Symposium on ***Dynamics of Fluids in Fractured Rock***, February 10-12, 2004, Editted by B. Faybishenko and P. A. Witherspoon, Earth Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA94720, USA, pp.360-366
40. **Wu, Yu-Shu**, Guoping Lu, Keni Zhang, and G. S. Bodvarsson, Modeling unsaturated flow and transport processes in fractured tuffs of Yucca Mountain, LBNL-53439, ***2003 Modflow and More Conference,*** September 16-19, Denver, Colorado, USA, p.746-750
41. **Wu, Yu-Shu**, "Non-Darcy Flow behavior near High-Flux Injection Wells in Porous and Fractured Formations," LBNL-52541, International Symposium on *Underground Injection Science and Technology*, Lawrence Berkeley National Laboratory, Berkeley, CA, October 22-25, 2003
42. **Wu, Y. S**., G. Lu, K. Zhang, and G. S. Bodvarsson, "A Mountain-Scale Model for Characterizing Unsaturated flow and Transport in Fractured Tuffs of Yucca Mountain," LBNL-52524, Proceedings of *TOUGH Symposium* 2003, Lawrence Berkeley National Laboratory, Berkeley, CA., May 12-14, 2003
43. Finsterle, Stefan, G. Moridis, C. Oldenburg, and **Yu-Shu Wu**, TOUGH Symposium 2003, Proceedings 2.0 (CD-ROM), LBNL-52494, Lawrence Berkeley National laboratory, October 15, 2003
44. **Wu, Y. S**., H. H. Liu, and G. S. Bodvarsson, "Effect of Small Fractures on Flow and Transport Processes at Yucca Mountain, Nevada," LBNL- 51848, Proceedings of *the 10th International High-Level Radioactive Waste Management Conference*, Las Vegas, Nevada, March 30-April 2, 2003
45. Zhang, K, **Y. S. Wu**, G. S. Bodvarsson, and H. H. Liu, "Determination of Unsaturated Flow Paths in a 2-D Randomly Distributed Fracture Network," LBNL-52192, *Proceedings of the World Water & Environmental Resources Congress 2003*, Philadelphia, PA, June 23-26, 2003
46. Zhang, K., **Y. S. Wu**, C. Ding, and K. Pruess, "TOUGH2_MP: A parallel version of TOUGH2," LBNL- 52508, Proceedings of *TOUGH Symposium* 2003, Lawrence Berkeley National Laboratory, Berkeley, CA., May 12-14, 2003
47. Moridis, G. Y. Seol, and **Y. S. Wu**, "Modeling Studies of Mountain-scale Radionuclide Transport in the Unsaturated Zone at Yucca Mountain, Nevada," LBNL-52567, Proceedings of *TOUGH Symposium* 2003, Lawrence Berkeley National Laboratory, Berkeley, CA., May 12-14, 2003
48. Bodvarsson, G. S., J. Birkholzer, S. Finsterle, H. H. Liu, J. Rotqvst, and **Y. S. Wu**, "The Use of TOUGH2/iTOUGH2 in Support of the Yucca Mountain Project: Successes and Limitations," Proceedings of *TOUGH Symposium* 2003, Lawrence Berkeley National Laboratory, Berkeley, CA., May 12-14, 2003
49. Zhang, K, **Y. S. Wu**, G. S. Bodvarsson, and H. H. Liu, "Modeling focusing flow in a large-scale unsaturated fracture network," LBNL-51483, *AGU 2002 Fall Meeting*, San Francisco, CA., December 6-10, 2002
50. Zhang, K. **Y. S. Wu**, and G. S. Bodvarsson, "The use of parallel computing to simulate fluid flow in the unsaturated zone of Yucca Mountain, Nevada," LBNL-51089, *The Geological Society of America 2002 Denver Annual Meeting*, Denver, CO, October 27-30, 2002
51. Bodvarsson, G. S., **Y. S. Wu**, and K. Zhang, "Discrete-Flow-Path Development in Unsaturated Fractures at Yucca Mountain," LBNL-51079, *The Geological Society of America 2002 Denver Annual Meeting*, Denver, CO, October 27-30, 2002
52. Haukwa, C., Y. S. Wu, and G. S. Bodvarsson, "Thermal Loading at a Potential Repository: Modeling

the Thermal-Hydrological Response within the Unsaturated Zone at Yucca Mountain, Nevada," LBNL-51080, *The Geological Society of America 2002 Denver Annual Meeting*, Denver, CO, October 27-30, 2002

53. **Wu, Y. S**., L. Pan, J. Hinds, and G. S. Bodvarsson, "Modeling Capillary Barrier Effectss in Unsaturated Fractured Tuffs of Yucca Mountain, Nevada," LBNL-47012, Proceedings of *the Ninth International Conference of High-Level Radioactive Waste Management*, Las Vegas, Nevada, April 29-May 3, 2001
54. Zhang, K, **Yu-Shu Wu**, Karsten Pruess, Chris Ding, and Erik Elmroth, "Parallel Computing Techniques for Large-Scale Reservoir Simulation of Multi-Component and Multiphase Fluid Flow," LBNL-46195**,** SPE-66343, Presented at *2001 SPE Reservoir Simulation Symposium*, Houston, TX, 11-14 February, 2001
55. Zhang, K. **Y. S. Wu**, C. Ding, and K. Pruess, "Application of Parallel Computing Techniques to a Large-Scale Reservoir Simulation," LBNL-47292, Proceedings of the Twenty-Sixth Workshop on *Geothermal Reservoir Engineering, Stanford University***,** Stanford, CA, Jan. 29-31, 2001
56. **Wu, Y. S**., "Numerical Simulation of Non-Darcy Flow in Porous and Fractured Media," LBNL-45855, *Geothermal Resources Council, 2000 Annual Meeting*, September 24-27, GRC Transactions, Vol. 24, pp. 641-646, 2000.
57. **Wu, Y. S**., "On the Effective Continuum Method for Modeling Multiphase Flow, Multicomponent Transport and Heat Transfer in Fractured Rock," Proceedings in International Conference on "*Dynamics of Fluids in Fractured Rocks, Concepts and Recent Advances*," Faybishenko (Editor), Berkeley, CA. Feb. 10-12, 1999
58. Elmroth, E., C. Ding, **Y. S. Wu**, and K. Pruess, "A Parallel Implementation of the TOUGH2 Software Package for Large Scale Multiphase Fluid and Heat Flow," Proceedings of Supercomputing'99, ACM, 1999
59. **Wu, Y. S**., S. Finsterle, and G. S. Bodvarsson, "Field-Scale Modeling Studies to Characterize Hydraulic Properties for Water, Air and Heat Flow in the Unsaturated Zone of Yucca Mountain," Book Chapter, *Characterization and Measurement of the Hydraulic Properties of Unsaturated Porous Media***,** edited by M. Th. Van Genuchten, Leij, F. J. and Wu, L., Published by the University of California, Riverside, pp.1537-1548, 1999
60. **Wu, Y. S.**, "A Virtual Node Method for Treatment of Wells in Modeling Multiphase Flow in Reservoirs," Proceedings of the *Twenty-Fourth Workshop on Geothermal Reservoir Engineering, Stanford University***,** Stanford, CA, pp.144-157, Jan. 25-27, 1999
61. **Wu, Y. S**. and K. Pruess, "Integral Solutions for Transient Fluid Flow through a Porous Medium with pressure-Dependent Permeability." Presented at *The Neville Cook Conference*, Lawrence Berkeley Laboratory, October 16-127, 1998
62. **Wu, Y. S**., C. F. Ahlers, C. Haukwa, A. Ritcey, E. Sonnenthal, and G.S. Bodvarsson, "The 3-D site-scale model – calibrations and predictions," Proceedings of *the Eighth International Conference of High-Level Radioactive Waste Management,* pp.44-46, Las Vegas, Nevada, May 11-14, 1998
63. Fairley, J. P and **Y. S. Wu**, "Modeling fast pathways using isotopic tracers in Yucca Mountain, Nevada," Proceedings of *the Eighth International Conference of High-Level Radioactive Waste Management*, pp.88-89, Las Vegas, Nevada, May 11-14, 1998
64. **Wu, Y. S**. and K. Pruess, "Several TOUGH2 modules developed for site characterization studies of Yucca Mountain, *TOUGH2 Workshop'* 98, Berkeley, CA., May 4-6, 1998
65. **Wu, Y. S**. and K. Pruess, "A 3-D Hydrodynamic dispersion Model for Modeling Tracer Transport in Geothermal Reservoirs," Proceedings of the *Twenty-Third Workshop on Geothermal Reservoir Engineering, Stanford University,* Stanford, CA, Jan., 1998
66. **Wu Y. S**., S. Finterle, and G. S. Bodvarsson, "A Field-Scale Modeling Study of Characterizing Hydraulic Properties for Water, Air and Heat Flow in the Unsaturated Zone of Yucca Mountain,

Nevada," Proceedings of the International Workshop of *Characterization and Measurement of the Hydraulic Properties of Unsaturated Zone Porous Media*, Riverside, CA, Oct., 1997

67. Wu, Y. S., A, Ritcey, and G. S. Bodvarsson, "A Modeling Study of Perched Water Phenomena in the Vadose Zone," Proceedings of the 1997 *AGU Fall Meeting*, San Francisco, CA., November, 1997

68. Bodvarsson, G. S., **Y. S. Wu**, E. Sonnenthal, C. F. Ahlers, T. M. Bandurraga, C. Haukwa, J. Fairley, J. Hinds, and A, Ritcey, "A Site-Scale Model for Modeling Unsaturated Zone Processes at Yucca Mountain, Nevada," Proceedings of the 1997 *AGU Fall Meeting*, San Francisco, CA., November, 1997

69. Wu, Y. S., T.M. Bandurraga, C. F. Ahlers, S. Finsterle, G. Chen, C. Haukwa, G.S. Bodvarsson, E. Kwicklis, J. Rousseau, and L. Flint, "On calibration of the UZ site-scale model of Yucca Mountain," Proceedings of *the Seventh International Conference of High-Level Radioactive Waste Management*, pp.73-75, Las Vegas, Nevada, April 29-May 3, 1996

70. Wu, Y. S. and K. Pruess, "A Numerical Method for Simulating Non-Newtonian Fluid Flow and Displacement in Porous Media," in *The Numerical Methods in Water Resources***,** Proceedings of *XI International Conference on Computational Methods in Water Resources*, Cancun, Mexico, July 22-26, 1996

71. Ahlers, C. F, S. Finsterle, **Y. S. Wu**, and G. S. Bodvarsson, "Determination of Pneumatic Permeability of a Multi-Layered System by Inversion of Pneumatic Pressure Data," Presented at the 1995 *AGU Fall Meeting*, San Francisco, CA., December 11-15, 1995

72. Wu, Y. S., J. B. Kool, P. S. Huyakorn, and Z. A. Saleem, "An Analytical Approach for Simulating Transport of Metals with Nonlinear Adsorption," Presented at the 1995 *AGU Spring Meeting*, Baltimore, MD., May 30 - June 2, 1995

73. Wu, Y. S. and K. Pruess, "Numerical Simulation of non-Newtonian Fluid Flow and Displacement in Porous Media," Presented at *the Third SIAM Conference on Mathematical and Computational Issues in Geosciences*, San Antonio TX, February 8-10, 1995

74. Wu, Y. S., Z. A, Saleem, S. Panday, and J. B. Kool, "A Regulatory Fate and Transport Assessment Model for Oily Wastes," *Proceedings of Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection and Restoration Conference***,** The American Petroleum Institute and the National Ground Water Association, Houston, TX, Nov. 1994

75. Park, N. S and Y. S. Wu, "Evaluation of Vertical Leakage Schemes for Multilayer Sharp-Interface Saltwater-Intrusion Model," *The Numerical Methods in Water Resources***,** *Proceedings of X International Conference on Computational Methods in Water Resources*, Heidelberg, Germany, July 1994

76. Wu, Y. S., P. A. Forsyth, and K. Pruess, "A Robust Numerical Scheme for Simulating Water Infiltration Through Heterogeneous Unsaturated Soils with Dry Initial Conditions," Presented at the 1994 *AGU Spring Meeting*, Baltimore, MD., May 23-27, 1994

77. Huyakorn, P. S., S. Panday, and **Y. S. Wu**, "A Comprehensive Simulator for Assessing Transport of NAPL and Constituents in the Sub-Surface," Presented at *The Annual Meeting, Geological Association of Canada,* Mineralogical Association Of Canada, University of Waterloo, Waterloo, Ontario May 16-18, 1994

78. Saleem, Z. A., P. S. Huyakorn, *Y. S. Wu*, N. S. Park, and S.Panday, "Efficient Composite Modeling Approach for 3D Multi-Phase Flow and Solute Transport in the Subsurface," Presented at *The Annual Meeting, Geological Association of Canada*, Mineralogical Association Of Canada, University of Waterloo, Waterloo, Ontario, May 16-18, 1994

79. *Wu, Y. S*., P.S. Huyakorn, S. Panday, and N. S. Park, "A Unified Approach for Simulating NAPL Migration in the Subsurface," Presented at ***SIAM*** *Conference on Mathematical and Computational Issues in Geosciences*, Houston TX, April 19-21, 1993

80. Huyakorn, P. S., *Y. S. Wu,* N. S. Park, S. Panday, and Z. A. Saleem, "Efficient Composite Modeling

Approach for 3D Multiphase Flow and Solute Transport in the Subsurface," Presented to the 1993 *AGU Spring Meeting*, Baltimore, MD, May 24-28, 1993

81. *Wu, Y. S.*, J. Kool, and J. McCord, "An Evaluation of Alternative Numerical Formulations for Two-Phase Air-Water Flow Simulation in Unsaturated Soils," Presented in the *1992 AGU Spring Meeting,* Montreal, Canada, May 1992

82. Piepho, M. G., A. G. Law, M. P. Connely, *Y. S. Wu*, and P. S. Huyakorn, "Simulation of Two Immiscible Fluids (Water and CCL4) in Unsaturated Media at the Hanford Site, Washington," Presented in the *1992 Spring AGU Meeting*, Montreal, Canada, May 1992

83. Huyakorn, P. S. **Y. S. Wu**, and S. Panday, "A Comprehensive Three-Dimensional Numerical Model for Predicting the Fate of Petroleum Hydrocarbons in the Subsurface," *Proceedings of Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection and Restoration Conference,* The American Petroleum Institute and the National Ground Water Association, Houston, TX, Nov. 1992

84. **Wu, Y. S.,** N. S. Park, P.S. Huyakorn, and S. Panday, "A Comprehensive Numerical Model for Simulating the Flow of Petroleum Products and Industrial Chemicals in the Subsurface," *The 16th Annual Army Environmental R&D Symposium Proceedings*, Williamsburg, VA, June, 1992

85. Sudicky, E. A., **Y. S. Wu**, and Z. Saleem, "Semi-Analytical Approach for Simulating Transport of a Seven-Member, Branched Decay Chain in 3D Groundwater Systems," Presented at the 1991 *AGU Spring Meeting*, Baltimore, MD, May 1991

86. Pruess, K and **Y. S. Wu**, "A Semi-Analytical Method for Heat-Sweep Calculations in Fractured Reservoirs," Presented at the 13th *Workshop on Geothermal Reservoir Engineering, Stanford*, CA, Jan. 1988

87. Witherspoon, P. A., C. J. Radke, Y. Shikari, K. Pruess, P. Persoff, S. Benson, and **Y. S. Wu**, "Feasibility Analysis and Development of a Foam-Protected Underground Natural Gas Storage Facility," Presented at the *1987 Distribution/Transmission Conference*, American Gas Association Operating Section, Las Vegas, May, 1987

Technical and Research Reports

1. Philip H. Winterfeld and **Yu-Shu Wu**, **User's Guide for TOUGH2-CSM (**TOUGH2-Carbon Sequestration Model) - Massively Parallel Simulation of Fully-Coupled Flow with Geomechanics. Department of Petroleum Engineering, Colorado School of Mines, January 2013

2. Perapon Fakcharoenphol, Yi Xiong, Litang Hu, Philip H. Winterfeld, Tianfu Xu, and **Yu-Shu Wu**, **USER'S GUIDE of TOUGH2-EGS:** A Coupled Geomechanical and Reactive Geochemical Simulator for Fluid and Heat Flow in Enhanced Geothermal Systems, VERSION 1.0, Petroleum Engineering Department, Colorado School of Mines, 1500 Illinois Street. Golden, CO 80401 USA, May 2013

3. Lehua Pan, Curtis M. Oldenburg, **Yu-Shu Wu**, and Karsten Pruess, "User's Guide for T2Well/ECO2N Version 1.0: Multiphase and Non-Isothermal Model for Coupled Wellbore-Reservoir Flow of Carbon Dioxide and Water," Earth Sciences Division, Lawrence Berkeley National Laboratory, December, 2010

4. Zhang, Keni, **Yu-Shu Wu**, and Karsten Pruess, "User's Guide for TOUGH2-MP - A Massively Parallel Version of the TOUGH2 Code," LBNL-315E, Earth Sciences Division, Lawrence Berkeley National Laboratory, May, 2008

5. Zhang, Keni, George J. Moridis, **Yu-Shu Wu**, and Karsten Pruess, and Karsten Pruess, "A Domain Decomposition Approach For Large-Scale Simulations Of Flow Processes In Hydrate-Bearing Geologic Media," *Proceedings of the 6th International Conference on Gas Hydrates (ICGH 2008),Vancouver, British Columbia, CANADA, July 6-10, 2008*, 2008

6. **Wu, Y. S**., G. Lu, K. Zhang, Y. Zhang, L. Pan, E. L. Sonnenthal, G. Zhang, H. H. Liu, J. E. Houseworth, T. Xu, C. K. Ho, and E. Hardin "*UZ Flow Models and Submodels,"* Research Report (AMR), LBID-2574, MDL-NBS-HS-000006, REV03, Lawrence Berkeley National Laboratory, Sandia National Laboratories, CRWMS Lead Laboratory for Repository Systems, Las Vegas, Nevada, August, 2007
7. **Wu, Yu-Shu**, Yingqi Zhang, and James Houseworth, "*Total System Performance Assessment (TSPA): Data Input Package for Unsaturated Zone Flow Parameters and Weighting Factors (UZ-1)*," Research Report (AMR), LBID-2611, TDR-TDIP-NS-000001 REV 00, Lawrence Berkeley National Laboratory, SNL, CRWMS Lead Lab for Repository System, Las Vegas, Nevada, April, 2007
8. **Wu, Yu-Shu**, Sumit Mukhopadhyay, Keni Zhang, and Yvonne W. Tsang, "A Mountain-Scale Thermal-Hydrological Model for Evaluating Repository Thermal Effects on Multiphase Flow in the Yucca Mountain Unsaturated Zone," Earth Sciences Division, Research Summaries 2004–2005, LBNL-59633, pp.59, 2006
9. **Wu, Yu-Shu**, Hui-Hai Liu, G. S. Bodvarsson, "A Triple-Continuum Model for Flow and Transport Processes in Fractured Rock," Earth Sciences Division, Research Summaries 2004–2005, LBNL-59633, pp.60, 2006
10. **Wu, Yu-Shu**, Lehua Pan, and Karsten Pruess, "A Physical Based Approach for Modeling Multiphase Fracture-Matrix Interaction in Fractured Porous Media," Earth Sciences Division, Research Summaries 2004–2005, LBNL-59633, pp.61, 2006
11. Pan, Lehua, Keni Zhang, **Yu-Shu Wu,** and G. S. Bodvarsson, "Infiltration-Seepage Responses: Effects of Capillary Barriers on Flow Partitions," Earth Sciences Division, Research Summaries 2004–2005, LBNL-59633, pp.53, 2006
12. **Wu, Yu-Shu**, Keni Zhang, and James Houseworth, "*Parameter Sensitivity Analysis for Unsaturated Zone Flow*," Research Report (AMR), LBID-2583, ANL-NBS-HS-000049, REV 00, DC #44748, Lawrence Berkeley National Laboratory, BSC, CRWMS M&O, Las Vegas, Nevada, 2005
13. **Wu, Y. S.,** S. Mukhopadhyay, K. Zhang, E.L. Sonnenthal, J. Rutqvist, N. Spycher, J. Leem, and K. Lee, Mountain-Scale Coupled-Processes (TH/THC/THM), MDL-NBS-HS-000007, Rev03, Lawrence Berkeley National Laboratory, BSC, CRWMS M&O, Las Vegas, Nevada, August 2005
14. **Wu, Y. S.,** G. Lu, K. Zhang, G. Zhang, H.H. Liu, T. Xu, and E.L. Sonnenthal, "*UZ Flow Models and Submodels,"* Research Report (AMR), LBID-2480, MDL-NBS-HS-000006, REV01, Lawrence Berkeley National Laboratory, BSC, CRWMS M&O, Las Vegas, Nevada, 2003
15. **Wu, Y. S**. E.L. Sonnenthal, J. Rutqvist, K. Zhang, S. Mukhopadhyay, P. Dobson, And, G. Zhang, Mountain-Scale Coupled-Processes (TH/THC/THM), LBID-2521, MDL-NBS-HS-000007, Rev01, Lawrence Berkeley National Laboratory, BSC, CRWMS M&O, Las Vegas, Nevada, 12/12/ 2003
16. Liu, H. H., C. F. Ahlers, L. Pan, and **Y. S. Wu**, "*Calibrated Properties Model*," Research Report (AMR), LBID-2472, MDL-NBS-HS-000003, Lawrence Berkeley National Laboratory, BSC, CRWMS M&O, Las Vegas, Nevada, 2003
17. Liu, H.-H., C. F. Ahlers, S. Mukhopadhayay, R. Hedegaard, J. Houseworth, G. Zhang, and Y**. S. Wu,** "*Analysis of Hydrological Properties Data*," Research Report (AMR), LBID-2471, MDL-NBS-HS-000001, Lawrence Berkeley National Laboratory, CRWMS M&O,. Las Vegas, Nevada, 2003
18. **Wu, Y. S**., Software code: TOUGH2. V1.6, Earth Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California, 2003
19. Moridis, G. J., Q. Hu, **Y. S. Wu**, and G. S. Bodvarsson, "Preliminary 3-D Site-Scale Studies of Radioactive Colloid Transport in the Unsaturated Zone at Yucca Mountain, Nevada," Lawrence Berkeley National Laboratory, LBNL-45876, September 2001
20. **Wu, Yu-Shu**, W. Zhang, and G. S. Bodvarsson, "Characterizing Flow and Transport Processes at Yucca Mountain," *Earth Sciences Division Annual Report, 1999-2000*, Lawrence Berkeley National Laboratory, LBNL-47002, pp.75-76, 2001

21. Ahlers, C.F., **Y. S. Wu**, Q. Hu, G. Li, H.H. Liu, J. Liu, and L. Pan, *Unsaturated Zone Flow Processes and Analysis*, MDL-NBS-HS-000012 REV00, LBID-2369, Bechtel SAIC Company, Las Vegas, Nevada; Lawrence Berkeley National Laboratory, Berkeley, California, 2001
22. Wang, J., A. Unger, J. Liu, **Y. S. Wu**, J. Hinds, C. Haukwa, E. Sonnenthal, C-F. Tsang, J. Rutqvist, abd G.S. Bodvarsson. "Unsaturated Zone Flow," In Chapter 3 of Supplemental Science and Performance Analyses, Consisting of Volume 1, Scientific Bases and Analyses, LBID-2364, TDR-MGR-MD-000007, REV 00. CRWMS M&O: Las Vegas, Nevada, 2001
23. Houseworth, J.E., H. H. Liu, L. Pan, **Y. S. Wu**, and G.S. Bodvarsson. "Unsaturated Zone Transport." In Chapter 11 of *Supplemental Science and Performance Analyses, Consisting of Volume 1, Scientific Bases and Analyses*, LBID-2366, TDR-MGR-MD-000007, REV 00. CRWMS M&O: Las Vegas, Nevada 2001
24. Wu, Y. S., J. Liu, T. Xu, C. Haukwa, H. H. Liu, and C. F. Ahlers. *UZ Flow Models and Submodels,* Research Report (AMR) MDL-NBS-HS-000006, Lawrence Berkeley National Laboratory. Las Vegas, Nevada, CRWMS M&O, 2000
25. Bodvarsson et al., "*Unsaturated Zone Flow and Transport Model Process Model Report*," PMR, TDR-NBS-HS-000002 REV00, Prepared for U. S. Department of Energy, Yucca Mountain Site Characterization Office, P. O. Box 30307, North Las Vegas, Nevada, 89036, 2000
26. Wu, Yu-Shu and K. Pruess, "T2R3D – A TOUGH2 Code for Tracer Transport in Heterogeneous Media," *Earth Sciences Division Annual Report, 1998-1999*, Lawrence Berkeley National Laboratory, LBNL-43816, pp.75-76, 2000
27. Wu, Yu-Shu, J. Hinds, C. F. Ahlers, H. H. Liu, L. Pan, A. Ritcey, M. Cushey, C. Haukwa, E. Sonnenthal, and G. S. Bodvarsson, "Continual Development of the UZ Model for Yucca Mountain, Neveda, " *Earth Sciences Division Annual Report, 1998-1999*, Lawrence Berkeley National Laboratory, LBNL-43816, pp.71-72, 2000
28. Pan, L., C. Haukwa, **Y. S. Wu,** and G. S. Bodvarsson, "Development of WinGrider: An Interactive Grid Generator for TOUGH2," *Earth Sciences Division Annual Report, 1998-1999*, Lawrence Berkeley National Laboratory, LBNL-43816, pp.73-74, 2000
29. Moridis, G. J., Q. Hu, **Y. S. Wu**, and G. S. Bodvarsson*, "Modeling Studies of Radionuclide Transport in the Unsaturated Zone of Yucca Mountain, Nevada*," Lawrence Berkeley National Laboratory, LBNL-45870, May 2000
30. Wu, Y. S., "On the Effective Continuum Method for Modeling Multiphase Flow, Multicomponent Transport and Heat Transfer in Fractured Rock," Research Report, Earth Sciences Division, Lawrence Berkeley National Laboratory, LBL-42720, Berkeley, CA, 1999
31. Moridis, G., **Y. S. Wu**, and K. Pruess, "EOS9nT: A TOUGH2 module for the simulation of flow and solute/colloid transport," Research Report, Earth Sciences Division, Lawrence Berkeley National Laboratory, LBL-41639, May 1998
32. Wu, Y. S., K. Pruess, and P. Persoff, "Gas Flow in Porous Media with Klinkenberg Effects," *Earth Sciences Division Annual Report, 1997*, Lawrence Berkeley National Laboratory, LBL- 42452, 1998
33. Wu, Y. S. and K. Pruess, "Numerical Method for Simulating Non-Newtonian fluid Flow in Porous Media," *Earth Sciences Division Annual Report, 1997*, Lawrence Berkeley National Laboratory, LBL-42452, 1998
34. Wu, Y. S., G. S. Bodvarsson, C. F. Ahlers, A, C. Ritcey, and C. Haukwa, "UZ Flow and Transport Model for Yucca Mountain, Nevada," *Earth Sciences Division Annual Report, 1997*, Lawrence Berkeley National Laboratory, LBL-42452, 1998
35. C. F. Ahlers, T. M. Bandurraga, **Y. S. Wu**, and G. S. Bodvarsson,"Calibration of the UZ flow and Transport Model for Yucca Mountain, Nevada," *Earth Sciences Division Annual Report, 1997*, Lawrence Berkeley National Laboratory, LBL-42452, 1998
36. Pruess, K., C. Oldenburg, G. Moridis, and **Wu, Y. S**., "Advances in Numerical Simulation of Flow

and Transport in multiphase, Multicomponent Systems," *Earth Sciences Division Annual Report, 1997*, Lawrence Berkeley National Laboratory, LBL-42452, 1998

37. **Wu, Y. S**. and A. K. Mishra, "Modifications and additions to Selected TOUGH2 Modules," Research Report, Earth Sciences Division, Lawrence Berkeley National Laboratory, LBL-41870, January 1998
38. **Wu, Y. S.,** A. C. Ritcey, C. F. Ahlers, J. J. Hinds, A. K. Mishra, C. Haukwa,, T.M Bandurraga, H. H. Liu, E. L. Sonnenthal, and G. S. Bodvarsson, "3-D site-scale model for abstraction in TSPA-VA," Yucca Mountain Project Milestone Report, SLX01LB3, Lawrence Berkeley National Laboratory, Berkeley, CA., April 3, 1998
39. Ritcey, A. C., **Y. S. Wu**, E.L. Sonnenthal, C. Haukwa, and G.S. Bodvarsson, "Predictions of Ambient Conditions along the East-West Cross Drift using the 3-D UZ Site-Scale Model," Yucca Mountain Project Milestone Report, Lawrence Berkeley National Laboratory, Berkeley, CA., January, 1998
40. **Wu, Y. S**., A. C. Ritcey, C. F. Ahlers, C. Haukwa, J. J. Hinds, E. L. Sonnenthal, A. K. Mishra, and G. S. Bodvarsson, "Providing base-case flow fields for TSPA-VA: Evaluation of uncertainty of present day infiltration rates using the DKM/base-case and DKM/weeps parameter sets," Yucca Mountain Project Milestone Report, SLX01LB2, Lawrence Berkeley National Laboratory, Berkeley, CA., December, 1997
41. **Wu, Y. S**., A. C. Ritcey, C. F. Ahlers, C. Haukwa, J. J. Hinds, E. L. Sonnenthal, A. K. Mishra, and G. S. Bodvarsson, "Providing base-case flow fields for TSPA-VA: Evaluation of uncertainty of present day infiltration rates using the 3-D site-scale UZ flow model," Yucca Mountain Project Milestone Report, SLX01LB1, Lawrence Berkeley National Laboratory, Berkeley, CA., November, 1997
42. **Wu, Y. S**., A. C. Ritcey, E. L. Sonnenthal, T. M. Bandurraga, C. Haukwa, J. P. Fairley, G. Chen, J. H. Li, and G. S. Bodvarsson, "Incorporation of perched water data into the UZ site-scale model," Yucca Mountain Project Milestone SP24UCM4, Lawrence Berkeley National Laboratory, Berkeley, CA. 1997
43. **Wu, Y. S**., A. C. Ritcey, and G. S. Bodvarsson, "Perched water analysis using the UZ site-scale model," Chapter 13 of "The site-scale unsaturated zone model of Yucca Mountain, Nevada, for the viability assessment," G. S. Bodvarsson, T. M. Bandurraga and Y. S. Wu, eds., Yucca Mountain Site Characterization Project Report, LBNL-40376, Lawrence Berkeley National Laboratory, Berkeley, CA, 1997
44. **Wu, Y. S**., A. C. Ritcey, C. Haukwa, and G. S. Bodvarsson, "Integrated 3-D site-scale flow model," Chapter 19 of "The site-scale unsaturated zone model of Yucca Mountain, Nevada, for the viability assessment," G. S. Bodvarsson, T. M. Bandurraga and Y. S. Wu, eds., Yucca Mountain Site Characterization Project Report, LBNL-40376, Lawrence Berkeley National Laboratory, Berkeley, CA, 1997
45. Ahlers, C.F. and **Y.S. Wu**, "Incorporation of Gas Flow Data into the UZ Model," Yucca Mountain Project Milestone SP24UBM4, Lawrence Berkeley National Laboratory, Berkeley, CA, 1997
46. **Wu, Y. S.,** C. F. Ahlers, P. Fraser, A. Simmons, and K. Pruess, "Software Qualification of Selected TOUGH2 Modules," Research Report, Earth Sciences Division, Lawrence Berkeley National Laboratory, LBL-39490, UC-800, October, 1996
47. **Wu, Y. S.,** K. Pruess, and P. Persoff, "Steady and Transient Analytical Solutions for Gas Flow in Porous Media with Klinkenberg Effects," Research Report, Earth Sciences Division, Lawrence Berkeley National Laboratory, LBL-39499, UC-1240, October 1996
48. Pruess, K., A. Simmons, **Y. S. Wu**, and G. Moridis, "TOUGH2 software Qualification" Research Report, Earth Sciences Division, Lawrence Berkeley National Laboratory, LBL-38383, UC-814, February 1996
49. **Wu, Y. S.** and K. Pruess "A Numerical Method for Simulating Non-Newtonian Fluid Flow and Displacement in Porous Media," Research Report, Earth Sciences Division, Lawrence Berkeley

National Laboratory, LBL-39359, UC-2000, February 1996
50. **Wu, Y. S**., G. Chen, and G.S. Bodvarsson, Perched Water Analysis, Chapter 7 of "Development and Calibration of the Three-Dimensional Site-Scale Unsaturated-Zone Model of Yucca Mountain, Nevada," Edited by G. S. Bodvarsson and M. Bandurraga, Yucca Mountain Site Characterization Project Milestone OBO2, Lawrence Berkeley National Laboratory, Berkeley, CA, 1996
51. **Wu, Y. S**., S. Finsterle, and K. Pruess, Computer Models and their Development for the Unsaturated Zone Model at Yucca Mountain, Chapter 4 of "Development and Calibration of the Three-Dimensional Site-S--cale Unsaturated-zone Model of Yucca Mountain, Nevada" Edited by G. S. Bodvarsson and M. Bandurraga, Yucca Mountain Site Characterization Project Milestone OBO2, Lawrence Berkeley National Laboratory, Berkeley, CA, 1996
52. **Wu, Y. S.,** G. Chen, C. Haukwa, and G.S. Bodvarsson, Three-Dimensional Model Calibration and Sensitivity Studies, Chapter 8 of "Development and Calibration Of The Three-Dimensional Site-Scale Unsaturated-Zone Model of Yucca Mountain, Nevada, G.S. Bodvarsson and M. Bandurraga, Yucca Mountain Site Characterization Project Milestone OBO2, Lawrence Berkeley National Laboratory, Berkeley, California, 1996
53. Bandurraga, T. M., **Y. S. Wu**, and G. Chen, Incorporation of Spatially Varying Parameter Distributions into the UZ Site-Scale Model, YMP Milestone SP24UAM4, Lawrence Berkeley National Laboratory, Berkeley, CA, 1996
54. **Wu, Y. S**., G. Chen, and G. Bodvarsson, "Preliminary Analysis of Effects of Thermal Loading on Gas and Heat Flow within the Framework of LBNL/USGS Site-Scale Model," Research Report, Earth Sciences Division, Lawrence Berkeley National Laboratory, LBL-37729, UC-814, December 1995
55. **Wu, Y. S.,** "Application of EPACMOW to LNAPL - Crude Oil Groundwater Contamination at the Bemidji, Minnesota, Site," Prepared for the Office of Solid Waste of U.S. EPA, September 1993
56. Huyakorn, P. S.**, Y. S. Wu, S.** Panday, N. S. Park, and P. A. Forsyth, "Documentation and User's Guide: MAGNAS3 - Multiphase Analysis of Groundwater, Non-aqueous phase liquid And Soluble component in 3 dimensions, with Adaptive Implicit Method', Version 2.0, HydroGeoLogic, Inc., July 1993
57. Huyakorn, P. S., **Y. S. Wu**, N. S. Park, and S. Panday, "Documentation and User's Guide: SIMLAS - Saltwater-Intrusion Model for Layered Aquifer Systems," Version 1.3, HydroGeoLogic, Inc., May 1993
58. Huyakorn, P. S., **Y. S. Wu**, S. Panday, and N.S. Park "Documentation and User's Guide: MAGNAS3 - Multiphase Analysis of Groundwater, Non-aqueous phase liquid And Soluble component in 3 dimensions," Version 1.0, HydroGeoLogic, Inc., April 1993
59. Park, N. S., T. N. Blandford, **Y. S. Wu**, and P. S. Huyakorn, "Documentation and User's Guide: CANVAS - A Composite Analytical-Numerical Model for Viral and Solute Transport Simulation," Version 1.0, Prepared for the Office of Ground Water and Drinking Water, U.S. EPA, Washington, D.C., HydroGeoLogic, Inc., January 1993
60. **Wu, Y. S.,** "Documentation and User's Guide: UFTNAS - Unsaturated-Zone Flow and Transport of NAPL and Solute," Prepared for the Office of Solid Waste of U.S. EPA, July 1992
61. **Wu, Y. S**., "Documentation and User's Guide: SFNAS - Saturated-Zone Flow of NAPL in an Aquifer System," Prepared for the Office of Solid Waste of U.S. EPA, July 1992.
62. **Wu, Y. S**., "Documentation and User's Guide: EPACMOW - EPA Composite Model for Oily Wastes," Prepared for the Office of Solid Waste of U.S.EPA, Aug. 1992
63. Huyakorn, P. S., J. Kool, and **Y. S. Wu**, "Documentation and User's Guide: VAM2D - Variably Saturated analysis Model in Two-Dimensions, Version 5.2 with Hysteresis and Chained Decay Transport," NUREG/CR-5352, U.S. Nuclear Regulatory Commission, Washington, DC, Oct. 1991
64. Kool, J. B. and **Y. S. Wu**, "Ground-Water Flow and Transport Modeling of the NRC-Licensed Waste

Disposal Facility, West-Valley, New York," NUREG/CR-5794, U.S. Nuclear Regulatory Commission, Washington, DC, Oct. 1991

65. Kool, J. B. and **Y. S. Wu**, "Validation and Testing of the VAM2D Computer Code," NUREG/CR - 5795, U.S. Nuclear Regulatory Commission, Washington, DC, Oct. 1991

66. Huyakorn, P. S, S. Panday, and **Y. S. Wu**, "Documentation and User's Guide: SAMFT3D - Single-Phase and Multiphase Flow and Transport in 3-Dimension, Version 1.0," Prepared for Los Alamos National Laboratory, Los Alamos, New Mexico, Sept. 1991

67. Huyakorn, P. S., **Y. S. Wu**, S. Panday, N.S. Park, and J.B. Kool, "Documentation and User's Guide: SAMFT2D - Single-Phase and Multiphase Flow and Transport in 2-Dimensions, Version 2.0," Prepared for Los Alamos National Laboratory, Los Alamos, New Mexico, Sept. 1991

68. Wu, Y. S., P. S. Huyakorn, S. Panday, N.S. Park, and J.B. Kool, "Documentation and User's Guide: SAMFT1D - Single-Phase and Multiphase Flow and Transport in 1-Dimension, Version 2.0," Prepared for Los Alamos National Laboratory, Los Alamos, New Mexico, June 1991

69. Wu, Y. S., "CMM - A Semi-Analytical Computer Model for Simulating Ground Water Fate and Transport of Contaminants Subject to Chained-Decay Reaction," Prepared for the Office of Solid Waste of U.S. EPA, May 1991

70. Wu, Y. S., K. Pruess, and P. A. Witherspoon, "Integral Solutions for Transient Fluid Flow through a Deformable Medium," Research Report, LBL-28938, Lawrence Berkeley Laboratory, May 1990

71. Witherspoon, P. A., S. Benson, P. Persoff, K. Pruess, C. J. Radke, and **Y. S. Wu**, "Feasibility Analysis and Development of Foam Protected Underground Natural Gas Storage Facilities," Research Report, LBL-28594, Earth Sciences Division, Lawrence Berkeley Laboratory, Feb. 1990

72. Wu, Y. S. and K. Pruess, "On Verification, Use and Treatment of Non-Newtonian Behavior of the Numerical Simulator MULKOM-GWF," Research Report, Earth Sciences Division, Lawrence Berkeley Laboratory, May 1990

73. Wu, Y. S., K. Pruess, and Z. X. Chen. "Buckley-Leverett Flow in Composite Porous Media," Research Report, LBL-28937, Lawrence Berkeley Laboratory, May 1990.

74. Wu, Y. S., K. Pruess and P. A. Witherspoon. "Integral Solutions for Transient Fluid Flow through a Deformable Medium," Research Report, LBL-28938, Lawrence Berkeley Laboratory, May 1990

75. Wu, Y. S., "Theoretical Studies of Non-Newtonian and Newtonian Fluid Flow through Porous Media," Ph.D. Thesis, LBL-28642, Lawrence Berkeley Laboratory, Feb. 1990

76. Wu, Y. S., K. Pruess, and P. A. Witherspoon. "Displacement of a Newtonian Fluid by a Non-Newtonian Fluid in a Porous Media," Research Report, LBL-27412, Lawrence Berkeley laboratory, Jan. 1990

77. Wu, Y. S., "A Comparison of Analytical Approaches for Wellbore Heat Transmission in Layered Formations," M.S. Thesis, LBL-28712, Lawrence Berkeley Laboratory, August 1988

78. Wu, Y. S. and K. Pruess. "An Analytical Solution for Wellbore Heat Transmission in Layered Formations, LBL-25056, Lawrence Berkeley Laboratory, March, 1988

79. Wu, Y. S. and K. Pruess, "On PVT-Data, Well Treatment and Preparation of Input-Data for an Isothermal Gas-Water-Foam Version of MULKOM," Research Report, LBL-25783, UC-403, Lawrence Berkeley Laboratory, Aug. 1988